UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Oregon State Office
P.O. Box 2965
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In Reply Refer to:
1283/9211 (OR-932/955.2) P

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EMS TRANSMISSION 03/31/2000
Instruction Memorandum No. OR-2000-046
Expires: 9/30/2001

To:	DMs, DSDs, Staff and Branch Chiefs
From:	State Director
Subject:	Fire Water Source Data Standard

Attached is the revised Fire Water Sources GIS layer data standard. All Fire Water data collection is to conform to this standard. Included within the data standard are the data collection and maintenance protocols and the quality control procedures to be used with this layer.

Transactional update tools have been developed. Field offices may begin initiating transactions as soon as a completed library access form (OR9167-5) and the name of the field office data steward have been provided to the State Data Administrator, Stan Frazier (OR955.2). The library access form may be accessed via the OR/WA Geospatial web site (http://web.or.blm.gov/GIS/docs/documents.htm).

If you have any questions about this standard or the update procedures, contact one of the following:

TITLE	NAME	PHONE NUMBER	EMAIL ADDRESS
State Data Steward	Ginny Vinson	(503) 808-2332	gvinson@fs.fed.us
State Data Administrator	Stanley Frazier	(503) 952-6009	sfrazier@or.blm.gov
GIS Technical Support	Dan Wickwire Lance Finnegan	(503) 952-6272 (541) 751-4237	dwickwire@or.blm.gov lfinnega@or.blm.gov

Signed by Kathy Eaton Acting Associate State Director	Authenticated by Mary O'Leary Management Assistant

1 Attachment	
	1 - Final Data Standard Attributes (18 pp)

Distribution
WO-520 (Rm 775, LS) - 1
FA-210 (Judy Crosby) - 1

Fire Water Source Spatial Data Standard

Date: 3/17/2000

TABLE OF CONTENTS

Project Name:	SPATIAL DATA STANDARDS		
Project Code:	SDS		
Name:	FIRE WATER SOURCES		
Code:	FWTR_SRC		
Author:	Data Administration		
Created On:	02/07/2000 3:09 PM	**Modified On:**	03/17/2000 10:30 AM

Layer Description

This provides information about the locations, capacity, type, etc. of water sources that may be used for fire fighting purposes.

This layer does not contain any sensitive information that might be withheld under the Freedom of Information Act and is generally considered releasable to the public.

Data Steward

State Data Steward
Ginny Vinson
Br. of Fire and Aviation
Oregon State Office
(503) 808-2332

Data Organization/Structure

The data within this spatial layer is to be structured as shown in the table below:

(the first four items are Arc/Info generated and will not be discussed further)

Column	Item Name	Width	Output	Type
1	AREA	8	18	F
9	PERIMETER	8	18	F
17	FWTR_SRC#	4	5	B
21	FWTR_SRC-ID	4	5	B
25	FWATER_NAME	30	30	C
55	LONG_DMS	24	24	C
79	SURFACE_ELEV	5	5	I
84	ACCURACY	1	1	C
85	T-R	17	17	C
102	SECTION	7	7	C
109	SUSTAINABILITY	1	1	C
110	GALLONS_CAPACITY	1	1	C
111	PUMP_DIST	3	3	I
114	DEPTH	2	2	I
116	INFLOW	5	5	I
121	WATERSOURCE	2	2	C
123	HELI_BUCKET	3	3	C
126	TENDER	3	3	C
129	ENGINE	3	3	C
132	PORTABLE	3	3	C
135	TYPE_SYM	1	1	C
136	POC_RESTRICT	15	15	C
151	SITE_TYPE	11	11	C
162	SEALER	10	10	C
172	CONSTR_TYPE	24	24	C
196	EDATE	4	4	C
200	VDATE	8	8	C
208	MAINT_NEEDS	1	1	C
209	RIGHTS_NUM	7	7	C
216	FWATER_OWN	30	30	C

Data Collection and Maintenance Protocols:

Accuracy Requirements: A wide range of positional accuracy is acceptable within the Fire Water Source theme. The Accuracy field within the Point Attribute Table contains feature level accuracy information stratified into the following four categories: (1) within 10 feet of actual location, (2) within 100 feet of actual location, (3) within 1000 feet of actual location, and (4) not within 1000 feet of actual location. Specific input methods have not been defined. This schema allows for a variety of data to be included within the theme yet allows for lower quality data to be excluded where appropriate for using or sharing the data.

Update Transactions: The unit of processing for updating the FWTR_SRC theme is the district. This means that district-wide transactions will be initiated by editors within the districts to update the theme. Editors will "check-out" their district's FWTR_SRC points. They will then add, delete, or modify points prior to "check-in". Utilities within OR/WA BLM's Updatetools User Interface are used to perform these transaction processes.

Update Frequency: Once the Fire Water Source theme has been created for a district it is the responsibility of the District Data Steward to ensure that the theme remains current. Bringing the theme up to a current level should take place at least once per year if not more frequently. This update cycle should begin and end at the start of the fiscal year.

Quality Control

Transaction level: This level of quality control occurs when a district has completed an update to the FWTR_SRC theme and the resulting coverage is provided back for inclusion into the GIS corporate library.

GIS topological checking is limited at check-in time since this is a point theme. The check-in program does ensure that all points fall within the district boundary. A warning message is provided back if points fall outside the district boundary. This theme has "required" fields that must be populated prior to checking the theme back into the library. All text field data must be filled out in upper case. Detailed descriptions of the FWTR_SRC theme attributes can be viewed in the theme metadata on the OR/WA BLM internet site. Upon check-in, all attributes are checked to assure that they conform to the data standard.

Monitoring level QC: Monitoring level quality control involves a periodic evaluation across the full extent of the FWTR_SRC theme. The State Data Steward in conjunction with the District Data Stewards are responsible for reviewing the FWTR_SRC theme at least once per year to assure that established protocols are being followed in the creation and maintenance of the theme. There is a wide variation in positional accuracy allowed within this theme. Evaluating the location of points requires a combination of checking positional accuracy (relating to true ground position) as well as accuracy relative to other features within the GIS such as streams or roads. The latter may be more important given the broad range of positional accuracy for the theme.

The State Data Steward should work with the GIS staff to develop monitoring level quality control plots and/or reports. Suggested checks include the following: (1) check for adequate spatial extent of coverage within each district, (2) check for vertical integration between the FWTR_SRC theme and other reference themes such as Streams, Lakes, GTRN, etc., (3) check to validate that the theme is being kept current. In addition, the FWTR_SRC theme metadata should be reviewed annually to ensure that it is up-to-date and accurately describes the theme.

Where appropriate, a yearly visit to sites should be conducted to identify maintenance needs and to assess the continued value of the site as a source of water for fire fighting purposes.

DATA ITEMS (ATTRIBUTES)

FIRE_WATER_SOURCE_NAME

Name:	FIRE_WATER_SOURCE_NAME
Code:	FWATER_NAME
Data Category:	Public
Type:	Alphanumeric
Length:	30

Description

[Required - blank not allowed]

Name of water source that can be used for fire fighting purposes.

Format

Format:	A(30)
Uppercase:	Yes

LOCATION_LONGITUDE_LATITUDE_TEXT

Name:	LOCATION_LONGITUDE_LATITUDE_TEXT
Code:	LONG_DMS
Data Category:	Public
Type:	Alphanumeric
Length:	24

Description

[Required]

The location of the water source in degrees, minutes, and seconds. Longitude followed by lattitude. This attribute is recalculated and repopulated upon check-in to the the GIS library.

Format

Format:	A(12),A(12)
Uppercase:	Yes

FIRE_WATER_SOURCE_SURFACE_ELEVATION_MEASURE

Name:	FIRE_WATER_SOURCE_SURFACE_ELEVATION_MEASURE
Code:	SURFACE_ELEV
Data Category:	Public
Type:	Integer
Length:	5

Description

[Required - zero not allowed]

The surface elevation of the water source. This is used primarily to determine whether the source can be utilized by helicopters.

Format

Unit:	METERS
Format:	I(5)
Uppercase:	N/A

LOCATION_ACCURACY_CODE

Name:	LOCATION_ACCURACY_CODE
Code:	ACCURACY
Data Category:	Public
Type:	Alphanumeric
Length:	1

Description

[Required]

An indicator of the accuracy of the spatial location of the water source.

Format

Format:	A(1)
Uppercase:	Yes

Codes

The purpose of noting spacial accuracy is to give the potential user an idea of the reliability of finding the water source in the location as depicted in the theme. The methods of capturing the information and placing the location on the theme will effect the accuracy of the point. The code values represented here are an attempt to express what is the reasonable expectation of finding the water source within the given parameters as coded. One of the following codes must be used:

1 - Within 10 feet of the actual location.
2 - Within 100 feet of the actual location.
3 - Within 1000 feet of the actual location.
4 - Not accurate within 1000 feet of the actual location.

LOCATION_TOWNSHIP_NAME

Name:	LOCATION_TOWNSHIP_NAME
Code:	T-R
Data Category:	Public
Type:	Alphanumeric
Length:	17

Description

[Required]

Township and Range location of the fire water source. This attribute is generated from the Landlines theme.

Must be TXXY-RXXY where X's are numbers and Y is direction North, South, East or West.
Example: T27S-R09W

Format

Format:	A(17)
Uppercase:	Yes

LOCATION_SECTION_NUMBER

Name:	LOCATION_SECTION_NUMBER
Code:	SECTION
Data Category:	Public
Type:	Alphanumeric
Length:	7

Description

[Required] A blank or any number between 1-9 with a leading 0 (zero) is considered an error. If not 1-36, a warning is given.

A section is a major subdivision of a Public Land Survey System township, normally one mile by one mile in size, containing 640 acres. Non-rectangular subdivisions (such as lots) are also listed under this attribute. This attribute is generated from the Landlines theme.

Format

Format:	A(7)
Uppercase:	Yes

FIRE_WATER_SOURCE_SUSTAINABILITY_CODE

Name:	FIRE_WATER_SOURCE_SUSTAINABILITY_CODE
Code:	SUSTAINABILITY
Data Category:	Public
Type:	Alphanumeric
Length:	1

Description

[Required]

Ability of the fire water source to support fire suppression activities.

Format/Codes

Format:	A(1)	
Uppercase:	Yes	
List of Values:	N	Nonfunctional
	I	Initial Attack Only
	S	Sustainable

FIRE_WATER_SOURCE_CAPACITIY_MEASURE

Name:	FIRE_WATER_SOURCE_CAPACITIY_MEASURE
Code:	GALLONS_CAPACITY
Data Category:	Public
Type:	Alphanumeric
Length:	1

Description

[Required]

The quantity of water (gallons) that can be stored at this water source. This is a coded field that represent a capacity range.

Format/Codes

Format:	A(1)	
Uppercase:	Yes	
List of Values:	A	less than 500 gallons
	B	500 to 999 gallons
	C	1,000 to 9,999 gallons
	D	10,000 to 100,000 gallons
	E	Over 100,000 gallons

FIRE_WATER_SOURCE_PUMPING_DISTANCE_MEASURE

Name:	FIRE_WATER_SOURCE_PUMPING_DISTANCE_MEASURE
Code:	PUMP_DIST
Data Category:	Public
Type:	Integer
Length:	3

Description

[Optional]

The distance that water must be pumped from the water source to the fire equipment (engines and tenders).

Format

Unit:	FEET
Format:	I(3)
Uppercase:	N/A

FIRE_WATER_SOURCE_DEPTH_MEASURE

Name:	FIRE_WATER_SOURCE_DEPTH_MEASURE
Code:	DEPTH
Data Category:	Public
Type:	Integer
Length:	2

Description

[Required]

The average depth of the water source (in feet). Depth of 0 (zero) is allowed only when SUSTAINABILITY is Nonfunctional (N). Depth can be >0 when SUSTAINABILITY = N.

Format

Unit:	feet
Format:	I(2)
Uppercase:	N/A

FIRE_WATER_SOURCE_INFLOW_MEASURE

Name:	FIRE_WATER_SOURCE_INFLOW_MEASURE
Code:	INFLOW
Data Category:	Public
Type:	Integer
Length:	5

Description

[Required]

The quantity of water coming into the water source (in gallons per minute). If INFLOW equals zero, then SUSTAINABILITY must be either Nonfunctional or Initial Atack.

Format

Unit:	gal/min
Format:	I5
Uppercase:	N/A

FIRE_WATER_SOURCE_ORIGIN_CODE

Name:	FIRE_WATER_SOURCE_ORIGIN_CODE
Code:	WATERSOURCE
Data Category:	Public
Type:	Alphanumeric
Length:	2

Description

[Required]

Watersource refers to the descriptive Data Category assigned to a water source such as a lake, river, guzzler etc.

Format

Format:	A(2)
Uppercase:	Yes

Codes

Use one of the following codes:

FS Streams. All natural or artificial channels of flowing water. This code therefore includes colloquial names such as river, gully, stream, creek, wash, channel, ditch and canals.

SS Lakes. A natural or artificial standing (not flowing) body of water. This code therefore includes lakes, ponds, bays, estuaries, wetlands, and impoundments.

UN Unclassified Water body. This code is used to represent water bodies that have not been classified.

PS Springs Seeps and wells. An issue of water flowing from the earth onto the land or into a body of surface water. There is no distinction made between man made/enhanced and those which are natural therefore includes guzzler. Also includes standpipes and hydrants or any other point source of water.

FIRE_WATER_SOURCE_UTILIZATION_HELICOPTER_CODE

Name:	FIRE_WATER_SOURCE_UTILIZATION_HELICOPTER_CODE
Code:	HELI_BUCKET
Data Category:	Public
Type:	Alphanumeric
Length:	3

Description

[Required]

Water source that can used by helicopters to fill large water carrying buckets. If water source can be used by Helicopters, then TYP_SYM may only be H (Heli Bucket) or A (All).

Format/Codes

Format:	A(3)	
Uppercase:	Yes	
List of Values:	YES	THE EQUPMENT CAN USE THE WATER SOURCE
	NO	THE EQUIPMENT CANNOT USE THE WATER SOURCE

FIRE_WATER_SOURCE_UTILIZATION_TENDER_CODE

Name:	FIRE_WATER_SOURCE_UTILIZATION_TENDER_CODE
Code:	TENDER
Data Category:	Public
Type:	Alphanumeric
Length:	3

Description

[Required]

Water source that can used by tenders (large tanker trucks used to refill smaller trucks with water). If water source can be used by tenders, then TYPE_SYM may only be T (Tender) or A (All).

Format/Codes

Format:	A(3)	
Uppercase:	Yes	
List of Values:	YES	THE EQUIPMENT CAN UTILIZE THE WATER SOURCE
	NO	THE EQUIPMENT CANNOT UTILIZE THE WATER SOURCE

FIRE_WATER_SOURCE_UTILIZATION_ENGINE_CODE

Name:	FIRE_WATER_SOURCE_UTILIZATION_ENGINE_CODE
Code:	ENGINE
Data Category:	Public
Type:	Alphanumeric
Length:	3

Description

[Required]

Water source that can used by fire engines to fill their water tanks. If the water source can be used by engines, then TYPE_SYM may only be E (Engine) or A (All).

Format/Codes

Format:	A(3)	
Uppercase:	Yes	
List of Values:	YES	THE EQUIPMENT CAN UTILIZE THE WATER SOURCE
	NO	THE EQUIPMENT CANNOT UTILIZE THE WATER SOURCE

FIRE_WATER_SOURCE_UTILIZATION_PORTABLE_CODE

Name:	FIRE_WATER_SOURCE_UTILIZATION_PORTABLE_CODE
Code:	PORTABLE
Data Category:	Public
Type:	Alphanumeric
Length:	3

Description

[Required]

Water source that can used by portable water carrying devices. If the water source can be used by portable devices, then TYPE_SYM may only be P (Portable) or A (All).

Format/Codes

Format:	A(3)	
Uppercase:	Yes	
List of Values:	YES	THE EQUIPMENT CAN UTILIZE THE WATER SOURCE
	NO	THE EQUIPMENT CANNOT UTILIZE THE WATER SOURCE

FIRE_WATER_SOURCE_UTILIZATION_TYPE_CODE

Name:	FIRE_WATER_SOURCE_UTILIZATION_TYPE_CODE
Code:	TYPE_SYM
Data Category:	Public
Type:	Alphanumeric
Length:	1

Description

[Optional]

Symbol used in map display to identify the utilization type. Only one code may be entered. If more than one applies (but not all) the user must decide which code they want to display.

Format/Codes

Format:	A(1)	
Uppercase:	Yes	
List of Values:	H	Helicopter Bucket
	E	Engine
	T	Tender
	P	Portable
	A	All

FIRE_WATER_SOURCE_CEDAR_RESTRICTIONS_TEXT

Name:	FIRE_WATER_SOURCE_CEDAR_RESTRICTIONS_TEXT
Code:	POC_RESTRICT
Data Category:	Public
Type:	Alphanumeric
Length:	15

Description

[Required]

Water from many sources is contaminated with a fungus that kills Port Orford Cedar and cannot be used in areas that are free of the fungus.

Format/Codes

Format:	A(15)
Uppercase:	Yes
CONTAMINATED	THE WATER SOURCE IS CONTAMINATED WITH THE FUNGUS AND CANNOT BE USED IN DISEASE FREE AREAS
CLEAN	THE WATER SOURCE IS FREE OF THE FUNGUS AND CAN BE USED IN DISEASE FREE AREAS

UNKNOWN	IT IS NOT KNOWN IF THE WATER SOURCE IS CONTAMINATED WITH THE FUNGUS

FIRE_WATER_SOURCE_SITE_TYPE_TEXT

Name:	FIRE_WATER_SOURCE_SITE_TYPE_TEXT
Code:	SITE_TYPE
Data Category:	Public
Type:	Alphanumeric
Length:	11

Description

[Required]

Identifies whether the water source is a natural or constructed feature.

Format/Codes

Format:	A(11)
Uppercase:	Yes
List of Values:	
NATURAL	WATER SOURCE IS A NATURAL FEATURE
CONSTRUCTED	WATER SOURCE IS A CONSTRUCTED FEATURE

FIRE_WATER_SOURCE_SEALER_TEXT

Name:	FIRE_WATER_SOURCE_SEALER_TEXT
Code:	SEALER
Data Category:	Public
Type:	Alphanumeric
Length:	10

Description

[Required - blanks not allowed]

Material used to line the water source.

Format

Format:	A(10)
Uppercase:	Yes

FIRE_WATER_SOURCE_CONSTRUCTION_TYPE_TEXT

Name:	FIRE_WATER_SOURCE_CONSTRUCTION_TYPE_TEXT
Code:	CONSTR_TYPE
Data Category:	Public
Type:	Alphanumeric
Length:	24

Description

[Required - blanks not allowed]

The general type of constructed features at the water source (i.e. access ramp, reservoir)

Format

Format:	A(24)
Uppercase:	Yes

FIRE_WATER_SOURCE_ESTABLISHED_DATE

Name:	FIRE_WATER_SOURCE_ESTABLISHED_DATE
Code:	EDATE
Data Category:	Public
Type:	Alphanumeric
Length:	4

Description

[Optional]

Year the water source was established or first used for fire suppression activities. Four (4) character year beginning with 19 or 20 (YYYY).

Format

Format:	A(4)
Uppercase:	N/A

FIRE_WATER_SOURCE_CONDITION_ASSESSED_DATE

Name:	FIRE_WATER_SOURCE_CONDITION_ASSESSED_DATE
Code:	VDATE
Data Category:	Public
Type:	Alphanumeric
Length:	8

Description

[Optional]

The date the water source was last visited and its condition assessed. If populated this must be contain 8 characters (YYYYMMDD). Years must begin with 19 or 20, Months must be between 1-12, Days must be between 1-31.

Format

Format:	YYYYMMDD
Uppercase:	N/A

FIRE_WATER_SOURCE_CONDITION_TEXT

Name:	FIRE_WATER_SOURCE_CONDITION_TEXT
Code:	MAINT_NEEDS
Data Category:	Public
Type:	Alphanumeric
Length:	1

Description

[Optional]

Identifies if maintenance is needed at the water source.

Format/Codes

Format:	A(1)	
Uppercase:	Yes	
List of Values:	Y	MAINTENANCE NEEDED
	N	MAINTENANCE NOT NEEDED

WATER_RIGHT_NUMBER

Name:	WATER_RIGHT_NUMBER
Code:	RIGHTS_NUM
Data Category:	Public
Type:	Alphanumeric
Length:	9

Description

[Optional]

The State Water Right application number, if applicable, for the water source (A-NNNNNNN) where A = R or P and NNNNNNN = a number assigned by the Oregon Dept. of Water Resources. Example: R-1234567

Format

Format:	A(1)-N(7)
Uppercase:	Yes

FIRE_WATER_SOURCE_OWNER_TEXT

Name:	FIRE_WATER_SOURCE_OWNER_TEXT
Code:	FWATER_OWNER
Data Category:	Public
Type:	Alphanumeric
Length:	30

Description

[Optional]

The owner of the water source.

Format

Format:	A(30)
Uppercase:	Yes